

AMENDMENTS TO THE CLAIMS

The following is a complete listing of revised claims with a status identifier in parenthesis.

LISTING OF CLAIMS

1. (Currently Amended) A method for automatic retrieval, in an automation system, of engineering data from a runtime system for an engineering system, and restoring representatives of the automation objects in the engineering system, the automation system including a multiplicity of individual runtime automation objects in the runtime system, the runtime automation objects have no direct reference to any associated engineering objects in the engineering system, the method comprising:

supplying, by each of the automation objects, an identifying designation of a type of respective representative to the engineering system;

creating, via the engineering system, said representatives for the designated types and, for each of the representatives, entering a reference to the corresponding automation object;

reading out, each representative read out engineering information from the object into the representative using the reference; and

restoring each of the representatives by entering said information into itself; wherein

in a first step for the restoration of device representatives in the engineering system, the method further includes,

supplying, for devices on which the automation objects run,
an identifying designation of a type of respective device
representative to the engineering system,
creating, via the engineering system, corresponding device
representatives for the designated types and entering, for each of
the device representatives, a reference to the device, and
having, based upon the reference, each device representative
read out engineering information from the device, and
in a second step for the restoration of representatives of the
automation objects in the engineering system, the method further
comprises,
supplying, via the automation objects, an identifying
designation of a type of respective representative to the engineering
system,
creating, via the engineering system, corresponding
representatives for the designated types and, for each of the
representatives, entering a reference to the automation object, and
having, based upon the reference, each representative read
out engineering information from the automation object.

2. (Canceled).

3. (Currently Amended) The method as claimed in claim [[2]] 3, wherein, in a third step for the restoration of communication relationships between the representatives of the automation objects in the engineering system, the method further comprises:

supplying, via the devices, lists with communication relationships to the engineering system,

converting, in the engineering system, entries of the lists into references to inputs and outputs of the representatives of the automation objects and, subsequently, setting up corresponding connections up in the engineering system.

4. (Previously Presented) The method as claimed in claim 1, wherein both the objects of the engineering system and the objects of the automation system are described by a uniform, executable object model and a direct communication at model level is possible between the objects of the engineering system and the objects of the automation system.

5. (Previously Presented) The method as claimed in claim 3, wherein entries in the lists with communication relationships contain sources and drains of the communication relationships, the sources and drains in each case being described by a triple from an identifier of the device, an identifier of the automation object and an identifier of the input or output.

6. (Previously Presented) The method as claimed in claim 1, wherein the objects of the automation system have no direct reference to the associated objects of the engineering system, to make it possible for the engineering system and automation system to be separated.

7. (Previously Presented) The method as claimed in claim 1 wherein, the method is used for the updating of already existing engineering information as a delta method.

8. – 14. (Canceled).

15. (Currently Amended) The method as claimed in claim ~~[[2]]~~ 7, wherein both the objects of the engineering system and the objects of the automation system are described by a uniform, executable object model and a direct communication at model level is possible between the objects of the engineering system and the objects of the automation system.

16. (Previously Presented) The method as claimed in claim 3, wherein both the objects of the engineering system and the objects of the automation system are described by a uniform, executable object model and a direct communication at model level is possible between the objects of the engineering system and the objects of the automation system.

17. (Previously Presented) The method as claimed in claim 4, wherein entries in the lists with communication relationships contain sources and drains of the communication relationships, the sources and drains in each case being described by a triple from an identifier of the device, an identifier of the automation object and an identifier of the input or output.

18. (Previously Presented) The method as claimed in claim 15, wherein entries in the lists with communication relationships contain sources and drains of the communication relationships, the sources and drains in each case being described by a triple from an identifier of the device, an identifier of the automation object and an identifier of the input or output.

19. (Previously Presented) The method as claimed in claim 16, wherein entries in the lists with communication relationships contain sources and drains of the communication relationships, the sources and drains in each case being described by a triple from an identifier of the device, an identifier of the automation object and an identifier of the input or output.

20. – 24. (Canceled).

25. (Currently Amended) The method of claim [[2]] 1, wherein the first step for the restoration of device representatives in the engineering system is initiated from a software system.

26. – 27. (Canceled).